Diagnosis of Toxoplasma infection in pregnant women and case tracing by using Real-time PCR and ELISA

Abstract:

The possibility of using Real-time PCR and ELISA test to detect toxoplasmosis will be evaluated by this project. In the aspect of Real-time PCR, P30 gene is selected as the target gene for PCR amplification to detect *Toxoplasma gondii*. According the experimentation, the Real-time PCR assay is able to detect as low as 8 tachyzoites and it is appropriate to detect *T. gondii*. Whereas in the ELISA test, recombination proteins of rSAG-1 and rSAG-2 are using for detection of anti-toxoplasmic antibodies. The cut-off value（OD_{405} nm＝0.3）was determined by Box titration, and 0.3 be as the cut off point for self-prepared ELISA test. During the period of investigation, sera were collected from 463 pregnant women. For the commercialized tests, 43 pregnant women were positive and the prevalence rate of toxoplasmosis was 9.29%. For the self-prepared ELISA tests, 49 pregnant women were positive and the prevalence rate was 10.58%. Then, 20 blood samples were collected again from pregnant women who were result of positive by commercialized tests, and Real-time PCR performance showed 8 positive samples. Comparison between Real-time PCR and self-prepared ELISA for diagnosis of Toxoplasmosis, the self-prepared ELISA test（OD_{405} nm of 0.258） has a sensitivity of 87.5% and specificity 75%. As a result, self-prepared ELISA may have potential power of examination for parasitemina of *T. gondii*. Even then, the improvement of ELISA with sensitivity and specificity up to 90% should be studied in the future.

Keyword: pregnant women, Toxoplasma gondii, Real-time PCR, ELISA, Latex agglutination test